

REMARKS

1. INTRODUCTION

Applicants thank the Examiner for the allowance of claims 1-3, 5-10, 17-18 and for the indication of allowable subject matter in claims 30-32. Claims 11, 14, 15, 27, 28, 31 and 32 are amended in the present amendment and new claims 33-35 have been added. Claims 4, 16, 22 and 23 were previously cancelled and claims 19-21 and 24-26 were previously withdrawn. Accordingly, claims 1-3, 5-15, 17, 18 and 27-35 are presently under consideration in this application. Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following arguments.

2. AMENDMENT TO THE CLAIMS

Claims 11, 14, 15, 28, 31 and 32 have been amended in response to the Examiner's rejection under 35 U.S.C. § 112. Claim 27 has been amended by correcting the status identifier associated with this claim, and has been further amended by incorporating therein the subject matter of original claim 4, which was cancelled in a previous amendment. Claim 28 has been further amended by adding subject matter identical to that recited by original claim 3. New claims 33-35 correspond to previous claims 30-32, respectively. Specifically, new claim 33 corresponds to previous claim 30 rewritten in independent form, and new claims 34-35 correspond to previous claims 31-32. Accordingly, Applicants submit that these amendments do not add any new matter.

3. RESPONSE TO THE CLAIM REJECTIONS UNDER 35 U.S.C. § 112

Original claims 11-15 and previously added claims 28-32 stand rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicants regard as the invention. In particular, the Examiner has objected to the following expression which appears in claims 11 and 28:

“wherein the heat exchanger includes at least one radially inner circumferential flow passageway having an inner strip fin and at least one radially outer circumferential flow passageway having an outer strip fin”.

The Examiner states that this expression renders the scope of the claims indefinite since it is not clear if the applicant is claiming that the heat exchanger has (a) three different pieces of fins which are a corrugated strip fin; an inner strip fin and an outer strip fin, or (b) the corrugated strip fin includes an inner strip fin and an outer strip fin.

With regard to claim 11, this claim is dependent on claim 1, which recites “a corrugated strip fin being arranged in each of said at least one circumferential fluid flow passageways”. Claim 11 has been amended to more clearly define the corrugated strip fins defined therein as being the same corrugated strip fins which are defined in independent claim 1. Claims 14 and 15 have been amended in consequence of the amendment of claim 11. The amendments to claims 28, 31 and 32 follow the amendments to claims 11, 14 and 15, respectively.

4. RESPONSE TO THE CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Original claim 27 and previously presented claims 28 and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,662,749 (Buschow). Claim 27 has been amended by incorporating therein the subject matter of original claim 4. Accordingly, independent claim 27 directed to a heat exchanger core is similar in scope to previously amended claim 1, which is allowed. Accordingly, it is submitted that claim 27 as amended should likewise be allowed.

Independent claim 28 as amended recites a heat exchanger comprising inner and outer concentric tubes having at least one circumferential fluid flow passageway formed along the outer surface of the outer tube. According to claim 28, the heat exchanger further comprises “a housing comprising a sidewall having an inner surface, the sidewall surrounding the outer tube..., the housing further comprising a second inlet and a second outlet extending through the sidewall, the second inlet and the second outlet being circumferentially spaced from one another” (emphasis added).

Therefore, claim 28 has been amended to further define the “circumferential fluid flow passageway” which is formed along the outer surface of the outer tube. In the heat exchanger of amended claim 28, a heat exchange fluid will flow circumferentially between a second inlet and a second outlet which are circumferentially spaced from one another, i.e. they are not aligned along the axis of the inner and outer tubes. Figure 1 illustrates an example of a heat exchanger 10 having a housing 12 which is provided with a second inlet 20 and a second outlet 22 which are circumferentially spaced from one another. In this specific example, the inlet 22 and outlet 22 are circumferentially spaced by about 180°.

In the Examiner’s description of the Buschow reference, the Examiner states that the heat exchanger disclosed by Buschow includes:

“at least one radially inner circumferential flow passageway (37’) having an inner strip fin (46) and at least one radially outer circumferential flow passageway (38’) having an outer strip fin (50)”.

While the Examiner is correct that the flow paths 37’ and 38’ illustrated in Figure 1 of Buschow are annular in shape, they do not comprise “circumferential fluid flow passageways”

within the meaning of claim 28. It is clear from the drawings of Buschow that the ports 26 and 27 which are in flow communication with flow paths 37' and 38' are axially aligned, i.e. they are not circumferentially spaced from one another. Although there will be some circumferential distribution of the heat exchange fluid in the header spaces 39 and 41, the primary direction of fluid flow through the flow paths 37' and 38' will be axial, not circumferential, due to the fact that the ports 26 and 27 are axially aligned with one another.

For at least this reason, amended independent claim 28 and dependent claim 29 are allowable over Buschow.

5. RESPONSE TO THE CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Original claim 27 stands rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,096,616 (Coffinberry) in view of U.S. Patent No. 3,323,586 (Burne et al.). This rejection raised by the Examiner is similar to the rejection of claim 1 raised in the previous Office Action dated August 11, 2005. That rejection was traversed by incorporation of the subject matter of cancelled claim 4 into claim 1. Since claim 27 has now been amended by incorporating therein the subject matter of original claim 4, it is submitted that claim 27 is likewise allowable over Coffinberry and Burne.

6. CONCLUSION

A genuine effort to resolve all issues has been made. For the above stated reasons, all of the claims presently pending in this application are believed to be allowable. Accordingly, such action is respectfully requested.

Respectfully submitted,

/Adam B. Strauss/

Adam B. Strauss
Reg. No. 43,167
DYKEMA GOSSETT PLLC
39577 Woodward Avenue, Suite 300
Bloomfield Hills, MI 48304
(248) 203-0764
ipmail@dykema.com
Customer No. 26127
Attorney for Applicant(s)

Date: May 4, 2006

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